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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,987	04/02/2004	Matthew S. Sprankle	157972-0009	2009

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EXAMINER

GARCIA, CARLOS E

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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05/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/816,987

Applicant(s)

SPRANKLE ET AL.

Examiner

Carlos E. Garcia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 9-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/02/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-8, drawn to a tolerance ring, classified in class 360, subclass 265.6.
 - II. Claims 9-11, drawn to method of fabricating a tolerance ring, classified in class 72, subclass 379.2.
 - III. Claims 12-15, drawn to a method of assembly of a tolerance ring, classified in class 29, subclass 428.

The inventions are distinct, each from the other because of the following reasons:

2. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.
3. Inventions Group II and Group I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the Group I invention as claimed can be manufacturing using a different material as that stated in Group II and with different processes of bending the material strip not including rolling or wrapping.

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4. Inventions Group III and Group I are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the Group I invention as claimed can be manufacturing using a different material as that stated in Group III and could be assembled with either adding the bearing member before or after inserting the tolerance ring into the actuator member.

5. Inventions Group II and Group III are directed to related processes. The related inventions are distinct if the (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed can have a materially different design or function. Additionally, Group II as claimed includes a specific process for bending of a metal strip, for which Group III does not claim. Group II claims could be used without the steps of inserting a bearing cartridge member into the cylindrical member, as a tolerance ring for products other than actuator arms. Group III as claimed requires a bearing cartridge member as part of the assembly process. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants.

6. During a telephone conversation with Joshua C. Harrison Reg. No. 45686 on 05/21/2007 a provisional election was made without traverse to prosecute the invention of a tolerance ring, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office

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action. Claim 9-15 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 2 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claims 2 and 8: The claim limitations "a material thickness" is unclear and does not specifically define what elements of the invention are referred to with the term "material thickness" as claimed. Furthermore, the claim limitations include the term "a radius of curvature of at least 2.5 times said material thickness" which does not indicate in which direction the radius of curvature is defined.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 2, 4, 5, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Obara et al. (US 2002/0039461).

Re claims 1 and 5: Obara et al. discloses an actuator arm assembly (27) for an information storage device (inherent in the art) comprising: an actuator arm (29), an actuator pivot bearing (1) and a tolerance ring (18) retaining the actuator pivot bearing (1) relative to the actuator arm (29), and where the tolerance ring (18) further comprises, a substantially cylindrical base portion (as shown in Figs.5 and 6; the cylindrical base portion is the sheet bent into a cylinder shape) having a first radius (see Fig.6 below), and a plurality of contacting portions (21), each having at least one central region (see Fig.5 below) that reaches a second radius (see Fig.6 below), at least two circumferential transition regions (22) each being circumferentially adjacent to the central region (as shown in Figs.5 and 6; as interpreted from the claims, the circumferential transition regions are each circumferentially adjacent to the central regions since they all touch the central regions in a circumferential direction) and spanning from the first radius (as discussed previously) substantially (the circumferential transition regions expand from the first radius to the second radius as shown in Fig.6) to the second radius (as discussed previously) over a circumferential transition length (as shown in Fig.5), and at least two axial transition regions (23,24) each being axially adjacent (as shown in Fig.5; the axial

FIG. 5

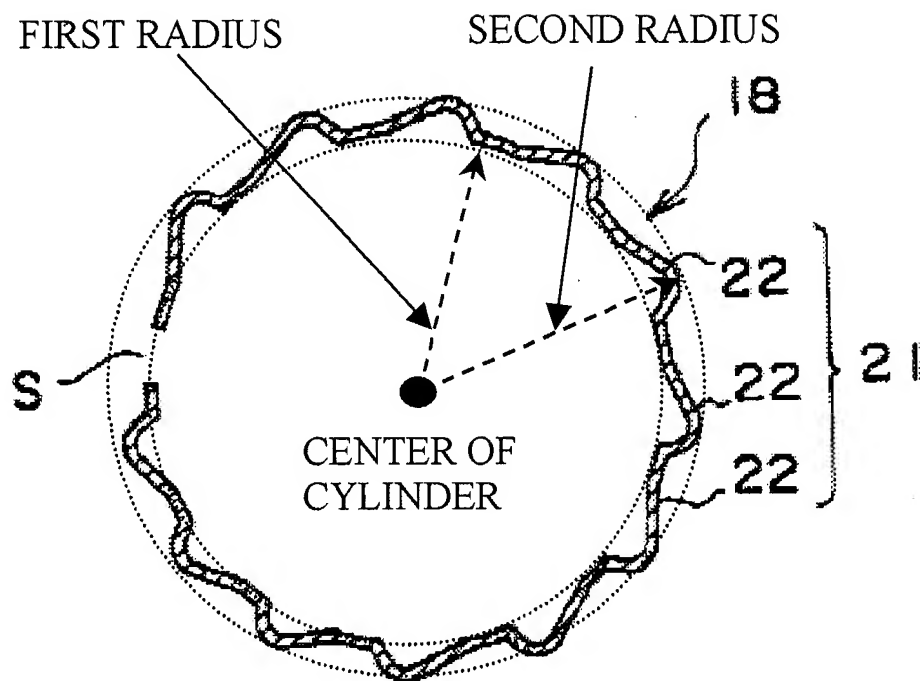
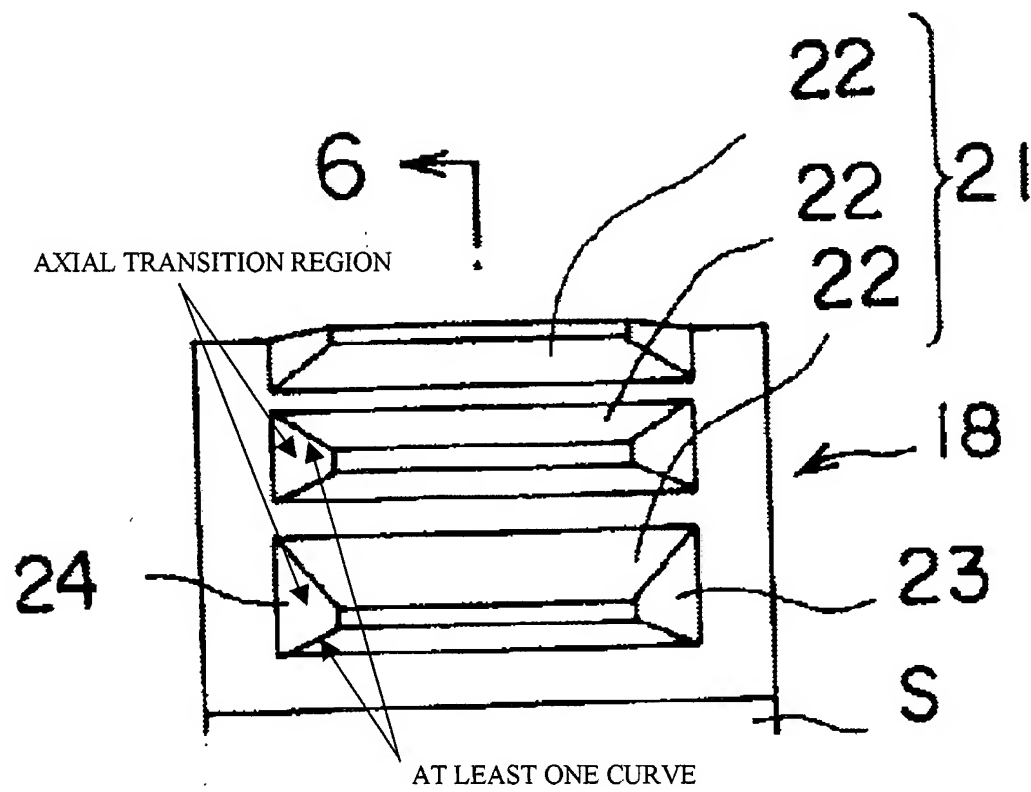


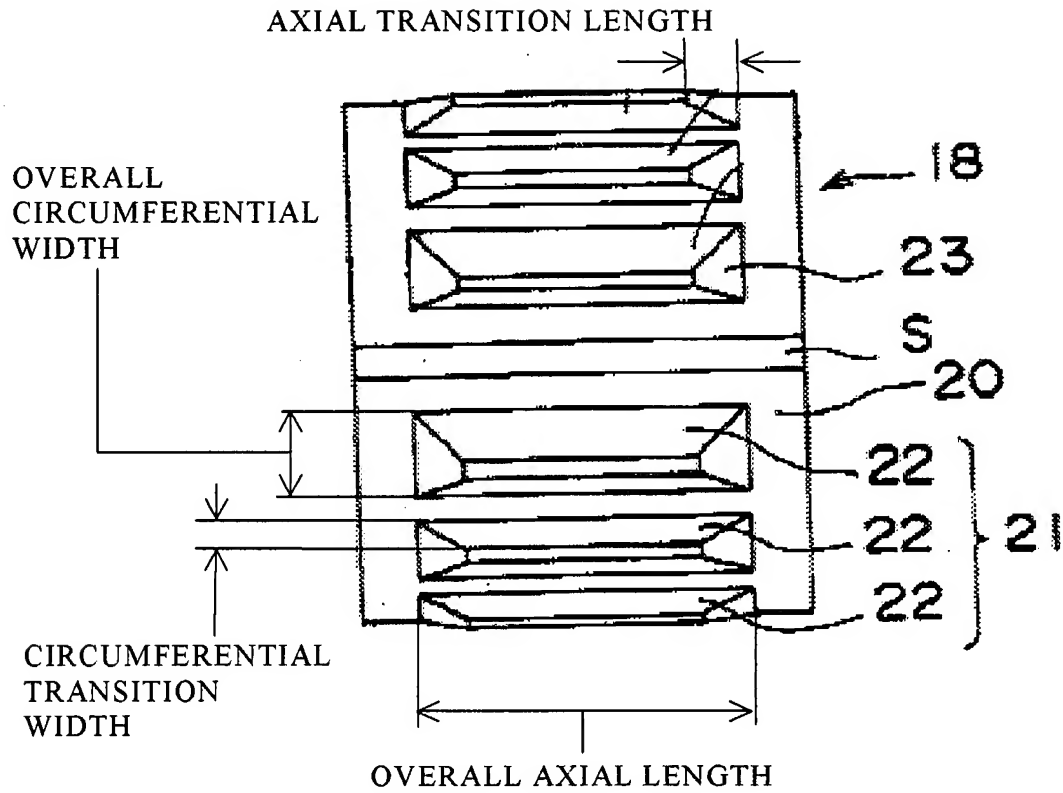
FIG. 6

Re claims 2 and 8: Obara et al. further discloses a material thickness (as interpreted from the claim, the tolerance ring sheet has a thickness) and where the axial transition regions have a profile (as shown in Fig.6; the axial transition regions have a profile extending along the surfaces of 23 and 24) including at least one curve (a straight curve is formed by the surfaces 23 or 24) with a radius of curvature (a straight line has an infinite radius of curvature) of at least 2.5 times the material thickness (as discussed previously, the material thickness of the tolerance ring sheet is finite) (see Fig.6).

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**FIG. 5**

Re claims 4 and 7: Obara et al. further discloses the contacting portions each have an overall circumferential width (as shown in Fig.5), and the ratio of the circumferential transition length (as shown in Fig.5) to the overall circumferential width as shown in Fig.5) is less than or equal to 0.4 (as can be seen from Fig.5; the ratio of the circumferential transition length to the overall circumferential width is no more than 0.4) (see Fig.5).

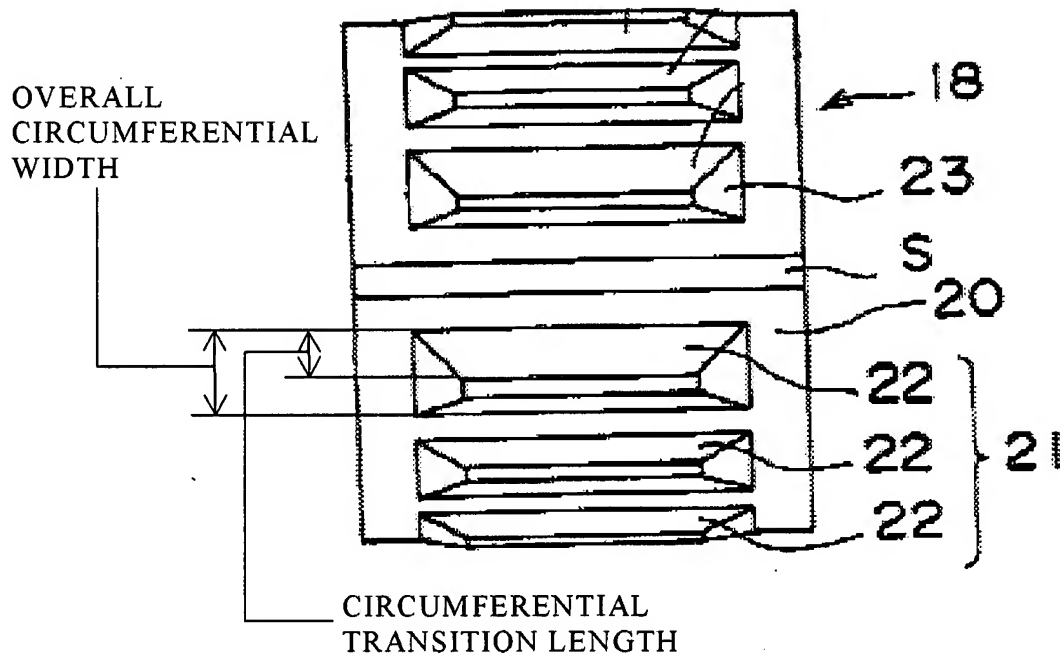


FIG. 5

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

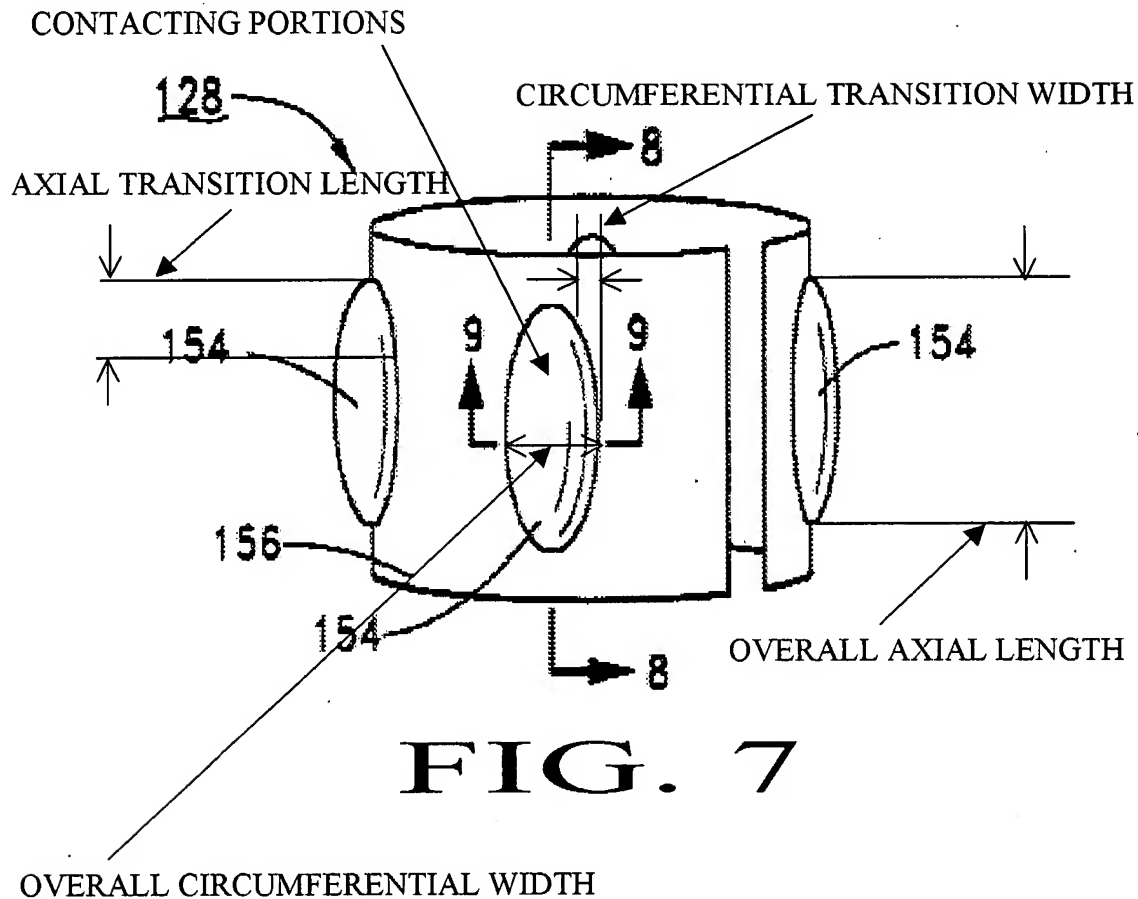
13. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obara et al. in view of Misso et al. (US 6,333,839). The teachings of Obara et al. have been discussed previously.

However, Obara et al. fails to disclose or fairly suggest the ratio of the axial transition length to the overall axial length is more than the ratio of the circumferential transition length to the overall circumferential width, but less than 250 times the ratio of the circumferential transition length to the overall circumferential width, as recited in claims 3 and 6.

Misso et al. teaches the use of a tolerance ring with contacting portions (154) which include curved profiles with axial transition portions (160) and corresponding circumferential transition regions (as shown in Fig.7 included herein). Consequentially, the axial transition length is longer than the circumferential transition length which gives the ratio of the axial transition length to the overall axial length is more than the ratio of the circumferential transition length to the overall circumferential width, but would be less than 250 times the ratio of the circumferential transition length to the overall circumferential width (see Figs.7-9; col.1, lines 11-14; col.2, lines 21-22, 48-53; col.4, lines 65-67; col.5, lines 1-41).

Therefore, in view of Misso et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the contacting portions as disclosed by Obara et al. with the contacting portions as taught by Misso et al. in order to obtain a tolerance ring which provides a controlled deformation during assembly and that provides a lower installation force required for putting the tolerance ring into the actuator body.

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Conclusion

14. The prior art made of record in PTO-892 Form and not relied upon is considered pertinent to applicant's disclosure.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos E. Garcia whose telephone number is 571-270-1354. The examiner can normally be reached on 8:30 am to 5:00 pm, Monday thru Thursday and 8:30 to 4:00 pm, Fridays. If attempts to reach the examiner by telephone are unsuccessful, the

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examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Carlos E. Garcia

5/23/2007


ANDREA WELLINGTON
SENIOR PATENT EXAMINER